

REMARKS

Reexamination and reconsideration of the rejections are hereby requested.

Claims 1-44 are pending in the application.

Claims 1-11, 41, and 42 have been objected to because of informalities. In response, Claims 1, 5, 8, and 9 have been amended to overcome the objections.

Claims 1, 4, 9, 11, 30, 31, 34 and 39 stand rejected under 35 U.S.C. §103a as being unpatentable over Skillicorn, U.S. Patent No. 4,694,480 in view of Sugiyama, JP 60-216298. Skillicorn teaches an X-ray source in which the X-ray tube 26 (Figure 6) is surrounded by oil in the cavity 40 rather than being in direct contact with a solid encapsulant. Further, Skillicorn teaches the use of a lead sheath on the outside of the device to provide radiation-shielding. The molded block 42 does not provide radiation-shielding. Skillicorn states that the block 42 is molded of “material which is high in both thermal conduction and electrical insulation properties.” (Skillicorn, column 5, lines 33-35). The “curable resin” (column 5, line 35) of Skillicorn certainly does not include any radio-opaque material distributed within it. It is important to note that the desired properties of the molded block 42 (thermal conduction and electrical insulation) do not include radiation shielding because radiation shielding is provided by “a closely fitting lead sheath.” (column 6, lines 26-27)

The examiner has combined Skillicorn with Sugiyama. Sugiyama teaches molding “lead shield plates” that include lead powder distributed in a material such as silicone rubber. The material is poured into a die to form the lead shield plates 2 as shown in the figure.

Because Skillicorn teaches an external sheath to provide radiation shielding, Sugiyama might at most suggest substituting the Sugiyama lead shield plate for the external sheath of Skillicorn. Such a substitution would not, however, meet the limitation in the claims that an encapsulant including a radio-opaque material be in direct contact with the X-ray tube. Further, there would be no motivation to use the Sugiyama lead shield plate material to make the molded block 42 of Skillicorn because Skillicorn specifies a material having thermal conduction and electrical insulation properties, not a radiation shielding property.

Claims 2, 3, 12, 18, 20, 32, 33, and 42-44 stand rejected under 35 U.S.C. §103a as being unpatentable over Skillicorn and Sugiyama and further in view of Steigerwald, U.S. Patent No. 4,504,895. It is submitted that these claims are patentable for the reasons set forth above concerning the deficiencies in the teachings of Skillicorn and Sugiyama that are not satisfied by Steigerwald.

Claims 5, 14, 21, 23, 25, 29 and 35 stand rejected under 35 U.S.C. §103 as being unpatentable over Skillicorn, Sugiyama, Steigerwald and further in view of Malcolm, U.S. Patent No. 4,979,198. Malcolm is presented as teaching a thin conductive layer over an electrically insulating material to provide electrical shielding. Nonetheless, the combined teachings of this reference does not meet the recited claims.

Claims 6-8, 15-17, 26-28 and 36-38 are rejected under 35 U.S.C. §103 as being unpatentable over Skillicorn, Sugiyama, Steigerwald and Malcolm and further in view of Davies. It is noted that these claims are dependant claims and are therefore allowable for the reasons set forth above with respect to the independent claims from which they depend.

Claims 10, 19 and 40 stand rejected as being unpatentable over Skillicorn, Sugiyama, Steigerwald and further in view of Courtois, U.S. Patent No. 3,643,094. These claims are dependent claims and are of therefore allowable for the reasons set forth above.

Claims 13, 22, and 41 are rejected under 35 U.S.C. §103a as being unpatentable over Skillicorn, Sugiyama, Steigerwald and Malcolm and further in view of Holland, U.S. Patent No. 6,320,936. These claims are dependent claims and are therefore allowable for the reasons set forth above with respect to the independent claims from which they depend. Finally, Claim 24 is rejected over Skillicorn, Sugiyama, Malcolm and further in view of Dewey, U.S. Patent No. 4,143,009. Claim 24 is a dependent claim and is therefore allowable for the reasons set forth above with respect to the claim from which it depends.

It is noted that the pending claims are provisionally rejected on the ground of non-statutory obviousness-type double patenting as being unpatentable over certain claims of co-pending Application Serial No. 10/370783 in view of Sugiyama. A terminal disclaimer will be filed at the appropriate time when the rejection is no longer provisional.

For the foregoing reasons, it is submitted that the pending claims are in condition for allowance and early favorable action is requested.

Respectfully submitted,

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